

# The CBHSQ Report

Short Report

July 17, 2014\*

## AGE OF SUBSTANCE USE INITIATION AMONG TREATMENT ADMISSIONS AGED 18 TO 30

### AUTHORS

Alex Strashny, Ph.D.

### INTRODUCTION

Initiating substance use during childhood or adolescence is linked to substantial long-term health risks. Early (aged 12 to 14) to late (aged 15 to 17) adolescence is generally regarded as a critical risk period for the initiation of alcohol use,<sup>1,2,3</sup> with multiple studies showing associations between age at first alcohol use and the occurrence of alcohol abuse or dependence.<sup>2,3,4</sup> Moreover, there is evidence across a range of other substances—including marijuana, cocaine, other psychostimulants, and inhalants—that the risk of developing dependence or abuse is greater for individuals who initiate use of these substances in adolescence or early adolescence than for those who initiate use during adulthood.<sup>3,4,5</sup> For example, 2012 National Survey on Drug Use and Health data indicate that among those adults who first tried marijuana at the age of 14 or younger, 13.2 percent were classified with illicit drug dependence or abuse; this percentage was 6 times higher than that for adults who first used marijuana at the age of 18 or older.<sup>6</sup> In fact, among adolescents, the transition from initiation to regular use of alcohol, marijuana, and other drugs often occurs within 3 years.<sup>7</sup> Examining patterns in the age of drug or alcohol initiation among persons in treatment for substance abuse may increase understanding of the characteristics of those who initiate substance use during their childhood or adolescence and highlight potential ways to optimize prevention and treatment efforts.

The Treatment Episode Data Set (TEDS) is a national data system of annual admissions to substance abuse treatment facilities. It has data on the age of initiation for up to three substances of abuse per admission. In this report, admissions are restricted to those aged 18 to 30 in order to control for the correlation between age at admission and age of initiation, a methodology that has been used before in *The TEDS Report*.<sup>8</sup> Admissions are classified according to the earliest age at which use began for any reported substance of abuse, including alcohol or other drugs (hereafter referred to as “substance use initiation”). Cases in which age at first use was missing or unknown for all three reported substances were excluded from the analyses. If age at first use was known for one substance of abuse but unknown or missing for other reported substances, the known age at first use was selected for that admission. It should also be noted that it is possible that the three substances reported at treatment entry did not include the first substance ever used. Because TEDS



### In Brief

- In 2011, the majority of substance abuse treatment admissions aged 18 to 30 with known age of initiation information (74.0 percent) began substance use at the age of 17 or younger; 10.2 percent initiated use at the age of 11 or younger.
- More than three quarters (78.1 percent) of admissions that began substance use at the age of 11 or younger reported abusing two or more substances at treatment entry; in contrast, only 30.4 percent of admissions that initiated at the age of 25 or older reported multiple substances of abuse.
- Admissions that initiated substance use at the age of 25 or older reported the largest proportions of primary abuse of heroin (35.3 percent) and prescription pain relievers (33.2 percent).
- Nearly two fifths (38.6 percent) of admissions that initiated substance use at the age of 11 or younger reported a co-occurring mental disorder.

does not record first substance used, defines the age of first use for alcohol as the age of first intoxication, and does not have data on nicotine, the actual initiation of substance use could have occurred at an earlier age than reported here.

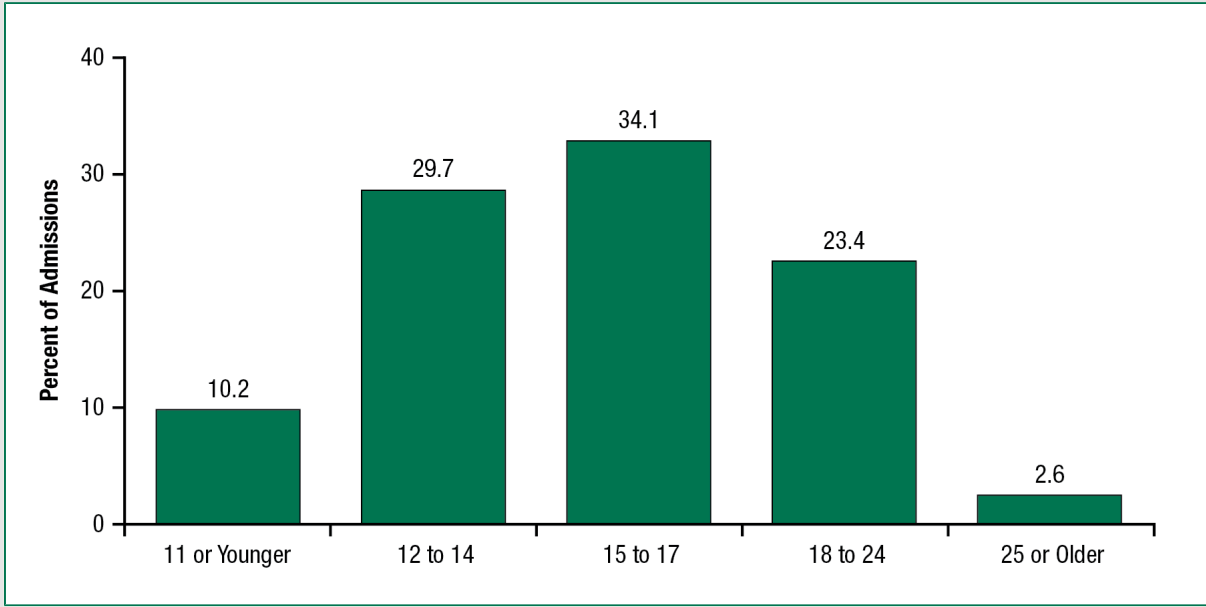
This issue of *The TEDS Report* presents 2011 data comparing demographic and other characteristics of admissions across five age-of-initiation groups: those initiating at the age of 11 or younger; between 12 and 14; between 15 and 17; between 18 and 24; and 25 or older. In 2011, there were 678,432 substance abuse treatment admissions aged 18 to 30 that reported age of initiation for at least one substance of abuse.

Note that TEDS is a census of all admissions to treatment facilities reported to the Substance Abuse and Mental Health Services Administration (SAMHSA) by state substance abuse agencies. Because TEDS involves actual counts rather than estimates, statistical significance and confidence intervals are not applicable. The differences mentioned in the text of this report have Cohen’s h effect size  $\geq 0.20$ , indicating that they are considered to be meaningful.

## OVERVIEW

Among admissions aged 18 to 30 with known age of initiation, 74.0 percent began substance use at the age of 17 or younger (Figure 1). About one third of admissions aged 18 to 30 years (34.1 percent) initiated between the ages of 15 and 17, another 29.7 percent initiated between the ages of 12 and 14, and 10.2 percent initiated at the age of 11 or younger. About one quarter of admissions initiated use as adults aged 18 or older (26.0 percent).

**Figure 1. Age of Substance Use Initiation among Treatment Admissions Aged 18 to 30: 2011**

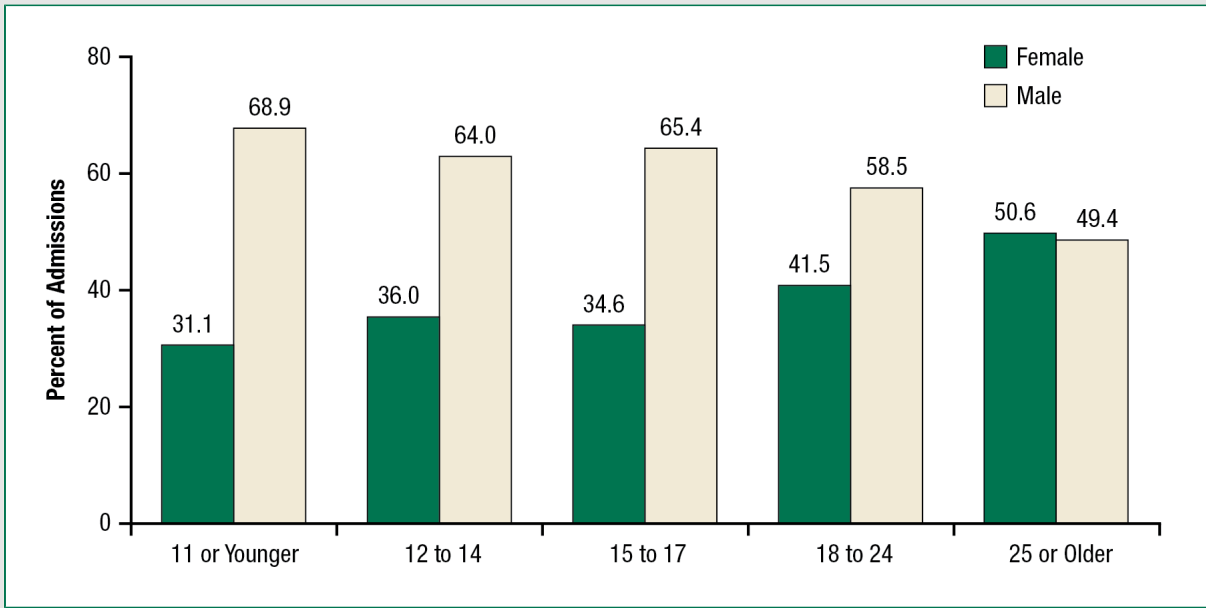


Source: SAMHSA Treatment Episode Data Set (TEDS), 2011.

DEMOGRAPHIC CHARACTERISTICS

Overall, the majority (63.3 percent) of substance abuse treatment admissions aged 18 to 30 were male. However, as age of initiation increased, the gap between the genders decreased. For example, nearly 7 in 10 admissions that reported first substance use at the age of 11 or younger (68.9 percent) were male; in comparison, among those admissions that initiated at the age of 25 or older, the proportions of males and females were about equal (49.4 and 50.6 percent, respectively; Figure 2). Generally, the majority of admissions in each age-of-initiation group were non-Hispanic White, ranging from 64.5 percent among those that initiated use at the age of 11 or younger to 74.4 percent among those that initiated use at the age of 25 or older.

Figure 2. Gender, by Age at Substance Use Initiation, among Treatment Admissions Aged 18 to 30: 2011

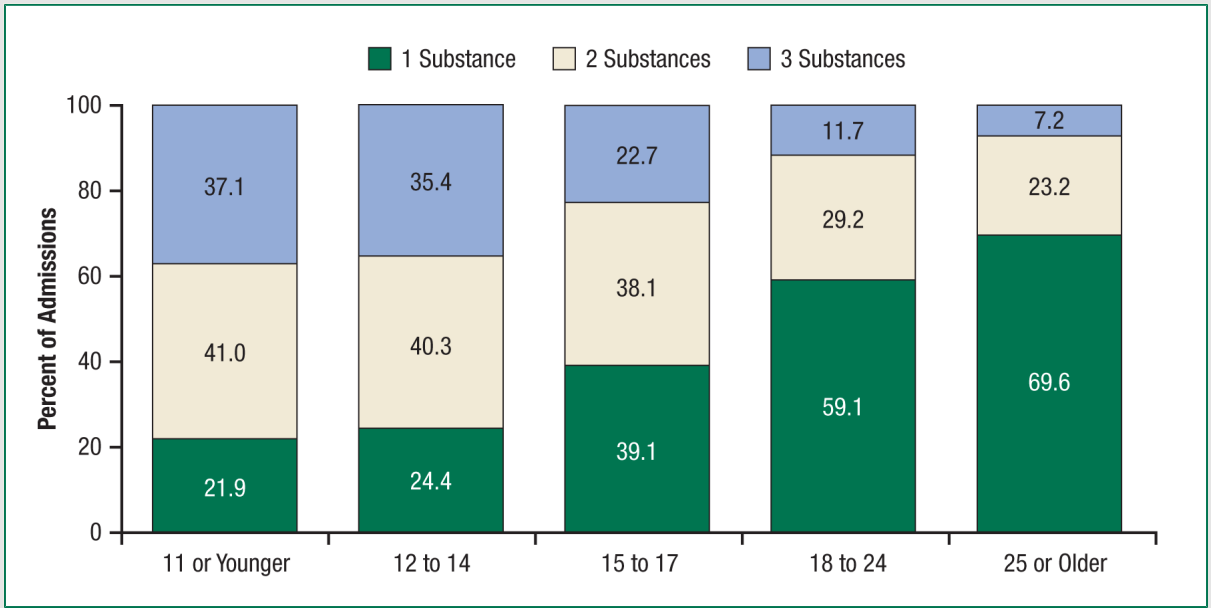


Source: SAMHSA Treatment Episode Data Set (TEDS), 2011.

# SUBSTANCES OF ABUSE, BY AGE OF INITIATION

According to TEDS, which records a maximum of three substances of abuse per treatment admission, the proportion of admissions reporting multiple substances of abuse increased as age of initiation decreased (Figure 3). More than three quarters (78.1 percent) of admissions aged 18 to 30 that began substance use at the age of 11 or younger reported abusing two or more substances at treatment entry. In contrast, only 30.4 percent of their counterparts that initiated at the age of 25 or older reported multiple substances of abuse.

**Figure 3. Number of Substances of Abuse Reported at Treatment Entry, by Age at Substance Use Initiation, among Treatment Admissions Aged 18 to 30: 2011**

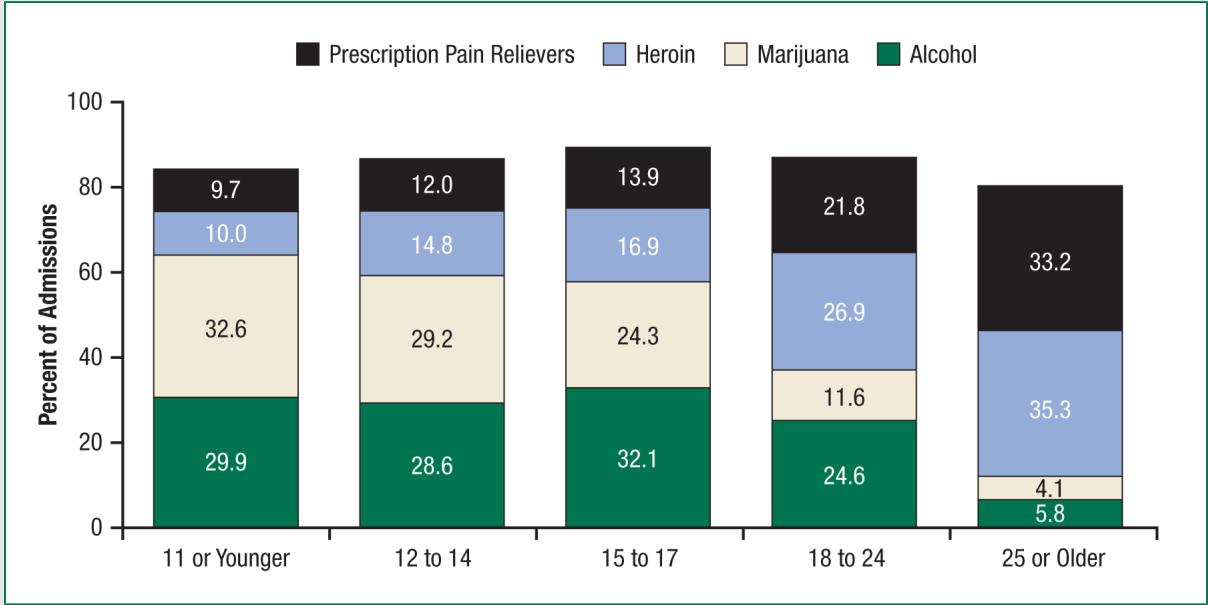


Note: Percentages may not total to 100 percent due to rounding.

Source: SAMHSA Treatment Episode Data Set (TEDS), 2011.

Marijuana was the most commonly reported primary substance of abuse among admissions that initiated substance use at the age of 14 or younger (29.2 percent among those initiating between the ages of 12 and 14 and 32.6 percent among those initiating at the age of 11 or younger; Figure 4). Among admissions that began substance use between the ages of 15 and 17, alcohol was the most commonly reported primary substance of abuse (32.1 percent), followed by marijuana (24.3 percent).

**Figure 4. Primary Substance of Abuse, by Age at Substance Use Initiation, among Treatment Admissions Aged 18 to 30: 2011**



Source: SAMHSA Treatment Episode Data Set (TEDS), 2011.

In contrast, admissions that initiated substance use at the age of 25 or older reported the largest proportions of primary abuse of heroin (35.3 percent) and prescription pain relievers (33.2 percent). More than one quarter (26.9 percent) of admissions aged 18 to 30 that initiated substance use between the ages of 18 and 24 reported primary heroin abuse, and 21.8 percent reported primary prescription pain reliever abuse.

Marijuana was the most commonly reported secondary substance of abuse among admissions aged 18 to 30 that initiated substance use at the age of 24 or younger, ranging from 19.8 to 35.8 percent across the age groups (Table 1). Among admissions that initiated substance use at the age of 25 or older, prescription pain relievers were the most commonly reported secondary substance of abuse (21.4 percent), and cocaine was the most commonly reported tertiary substance of abuse (19.8 percent). Alcohol was the most commonly reported tertiary substance of abuse (24.4 percent) among admissions that initiated substance use at the age of 11 or younger, whereas marijuana was the most prevalent tertiary substance of abuse among the admissions that initiated substance use between the ages of 12 and 17.

**Table 1. Most Commonly Reported Primary, Secondary, and Tertiary Substances of Abuse, by Age at Substance Use Initiation, among Treatment Admissions Aged 18 to 30: 2011**

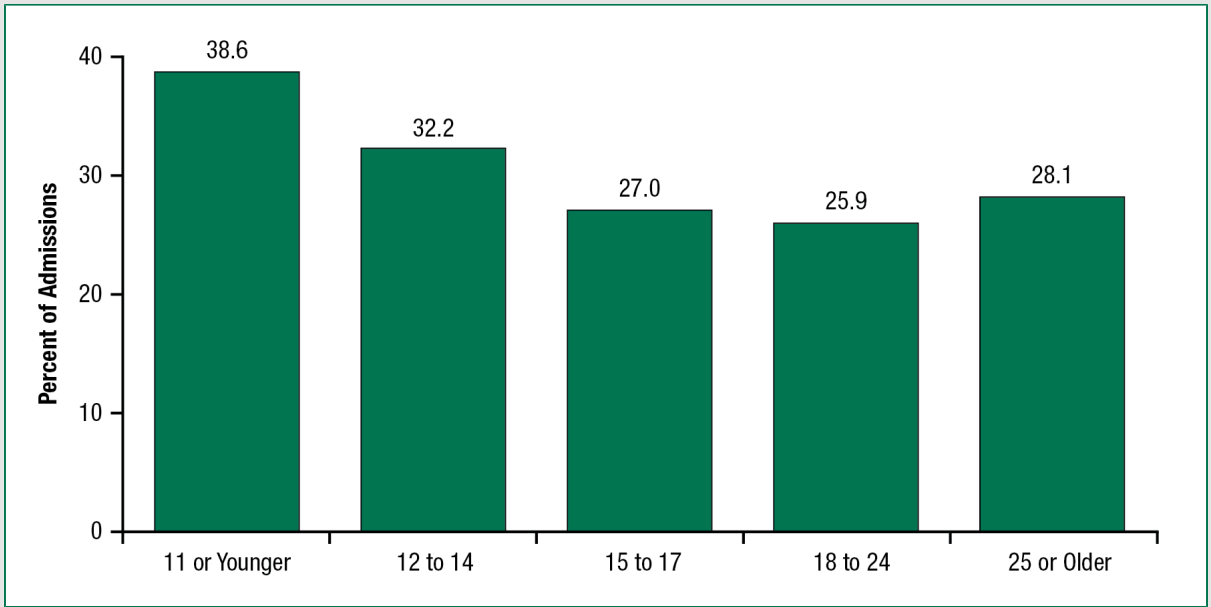
Age at Substance Use Initiation	Primary Substance of Abuse (Percent)	Secondary Substance of Abuse (Percent)	Tertiary Substance of Abuse (Percent)
11 or Younger	Marijuana 32.6	Marijuana 35.8	Alcohol 24.4
12 to 14	Marijuana 29.2	Marijuana 35.8	Marijuana 27.2
15 to 17	Alcohol 32.1	Marijuana 32.5	Marijuana 23.1
18 to 24	Heroin 26.9	Marijuana 19.8	Cocaine 20.6
25 or Older	Heroin 35.3	Prescription Pain Relievers 21.4	Cocaine 19.8

Source: SAMHSA Treatment Episode Data Set (TEDS), 2011.

**CO-OCCURRING DISORDERS**

In 2011, nearly two fifths (38.6 percent) of admissions aged 18 to 30 that initiated substance use at the age of 11 or younger reported a co-occurring mental disorder, which was the highest percentage of any age-of-initiation group (Figure 5).<sup>9</sup> Nearly one third of admissions that initiated substance use between the ages of 12 and 14 (32.2 percent) reported a co-occurring mental disorder. Among the other age-of-initiation groups, the percentages of admissions that reported a co-occurring mental disorder ranged from 25.9 percent among those who initiated substance use between 18 and 24 years of age to 28.1 percent among those that initiated substance use at the age of 25 or older.

**Figure 5. Admissions Reporting Co-Occurring Mental Disorders, by Age at Substance Use Initiation among Treatment Admissions Aged 18 to 30: 2011**



Source: SAMHSA Treatment Episode Data Set (TEDS), 2011.



---

## DISCUSSION

---

In 2011, the majority (74.0 percent) of treatment admissions aged 18 to 30 years reported that they initiated alcohol or drug use at the age of 17 or younger, which demonstrates the critical importance of prevention initiatives aimed at children and youths. The findings also show an inverse relationship between age of initiation and the number of substances of abuse reported: generally, a younger age of initiation was associated with more substances of abuse, particularly among those that initiated at the age of 11 or younger. These findings highlight the need for continued age-sensitive efforts to prevent and delay substance use initiation, especially for marijuana and alcohol, not only among adolescents aged 12 to 17 but also among children aged 11 or younger. These findings also illustrate the importance of providing timely and appropriate treatment and support services for children and adolescents who have a substance use disorder because they are at increased risk for initiating additional substances.

At the same time, the distinct cluster of findings on primary opiate abuse suggests that prevention efforts should not be targeted solely to children and adolescents. Specifically, more than one third (35.3 percent) of admissions that initiated substance abuse at the age of 25 or older reported primary heroin abuse, and another third (33.2 percent) reported primary prescription pain reliever abuse; in addition, 21.4 percent reported secondary prescription pain reliever abuse. The fact that such substantial portions of admissions initiated use at the age of 25 or older and were admitted to treatment by the age of 30 provides an indication of how dangerous the initiation of opiates can be and how quickly dependence can develop. These findings suggest a need for public health efforts focused on prevention of initiation of heroin and nonheroin opiates among young adults, and they underscore the ongoing importance of early intervention and treatment. Given the finding that those who initiated substance abuse at the age of 25 or older reported secondary prescription pain reliever and tertiary cocaine abuse, prevention efforts targeting young adults for these drugs may also be beneficial.

Admissions that initiated substance use at the age of 11 or younger had the highest proportion of co-occurring mental disorders at the time of admission to substance abuse treatment, suggesting that initiation of substance use at this age may be an early indicator of mental disorders. From a treatment perspective, substance abuse treatment settings provide important opportunities for the identification of persons in need of services for co-occurring mental health issues. Moreover, because research suggests that the risk of transition from substance initiation to dependence may be increased among adolescents with psychiatric issues, substance use prevention efforts among youth with mental disorders are especially important.<sup>4</sup> Finally, when compared to the oldest age groups, the higher risk of co-occurring substance abuse and mental disorders among admissions that initiated use at the age of 11 or younger highlights the importance of early outreach and intervention efforts for elementary school-aged children, particularly for alcohol and marijuana and specifically among those with mental disorders that are diagnosed early.

The findings related to gender reflect that males comprise a greater proportion of the treatment population than females. However, the general predominance of males was especially marked among admissions reporting substance initiation at the age of 11 or younger. Research has shown that males are less likely than females to perceive great risk from alcohol or marijuana use.<sup>10</sup> Prevention and treatment programs targeting male children and adolescents may benefit from content aimed at dispelling cultural misperceptions that alcohol or drug initiation is “normal” behavior for male youths.

SAMHSA and the National Institute on Drug Abuse have developed several educational resources on substance use for youth, parents, and other adults, including:

- online guides and tip sheets for adolescents that address the risks of initiating use across a wide variety of substances, including alcohol (<http://www.toosmarttostart.samhsa.gov/teens/>), marijuana (<http://store.samhsa.gov/shin/content/PHD641/PHD641.pdf>), prescription drugs (<http://store.samhsa.gov/shin/content/SMA12-4677B2/SMA12-4677B2.pdf>), heroin (<http://store.samhsa.gov/shin/content/PHD860/PHD860.pdf>), and tobacco (<http://store.samhsa.gov/shin/content/PHD633/PHD633.pdf>);
- general guidelines for parents, educators, and community leaders (<http://www.drugabuse.gov/sites/default/files/preventingdruguse.pdf>);
- resource guides for parents to address underage drinking, targeting fifth- and sixth-grade children in particular (<http://store.samhsa.gov/product/Help-Prevent-Underage-Drinking-Kit-Teaching-Guide-and-Poster-Bonus-Worksheets-and-Family-Guide/SMA09-4406>) and youths in general (<http://store.samhsa.gov/product/Surgeon-General-s-Call-to-Action-to-Prevent-and-Reduce-Underage-Drinking-A-Guide-to-Action-for-Families/SGCTA-FAM-07>);
- a resource guide for parents focusing on drug use among youths (<http://store.samhsa.gov/shin/content/SMA-3772/SMA-3772.pdf>); and
- resources for teachers (<http://teens.drugabuse.gov/educators>) and parents (<http://teens.drugabuse.gov/parents>) to address drug use among teens.

---

## END NOTES

---

1. Kroutil, L., Colliver, J., & Gfroerer, J. (2010). *OAS Data Review: Age and cohort patterns of substance use among adolescents*. Rockville, MD: Substance Abuse and Mental Health Services Administration, Office of Applied Studies.
2. Dawson, D. A., Goldstein, R. B., Chou, S. P., Ruan, W. J., & Grant, B. F. (2008). Age at first drink and the first incidence of adult-onset DSM-IV alcohol use disorders. *Alcoholism: Clinical and Experimental Research*, 32(12), 2149-2160. doi: 10.1111/j.1530-0277.2008.00806.x
3. King, K. M., & Chassin, L. (2007). A prospective study of the effects of age of initiation of alcohol and drug use on young adult substance dependence. *Journal of Studies on Alcohol and Drugs*, 68(2), 256-265.
4. Lopez-Quintero, C., Pérez de los Cobos, J., Hasin, D. S., Okuda, M., Wang, S., Grant, B. F., & Blanco, C. (2011). Probability and predictors of transition from first use to dependence on nicotine, alcohol, cannabis, and cocaine: Results of the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC). *Drug and Alcohol Dependence*, 115(1-2), 120-130. doi: 10.1016/j.drugalcdep.2010.11.004
5. Chen, C.-Y., Storr, C. L., & Anthony, J. C. (2009). Early-onset drug use and risk for drug dependence problems. *Addictive Behaviors*, 34(3), 319-322. doi: 10.1016/j.addbeh.2008.10.021
6. Center for Behavioral Health Statistics and Quality. (2013). *Results from the 2012 National Survey on Drug Use and Health: Summary of national findings* (HHS Publication No. SMA 13-4795, NSDUH Series H-46). Rockville, MD: Substance Abuse and Mental Health Services Administration.
7. Wittchen, H. U., Behrendt, S., Höfler, M., Perkonigg, A., Lieb, R., Bühringer, G., & Beesdo, K. (2008). What are the high risk periods for incident substance use and transitions to abuse and dependence? Implications for early intervention and prevention. *International Journal of Methods in Psychiatric Research*, 17(Suppl. 1), S16-S29. doi: 10.1002/mpr.254
8. Center for Behavioral Health Statistics and Quality. (2013, August 13). *The TEDS Report: Marijuana admissions aged 18 to 30: Early vs. adult initiation*. Rockville, MD: Substance Abuse and Mental Health Services Administration.
9. *Psychiatric problem in addition to alcohol or drug problem* is a TEDS Supplemental Data Set item.
10. Office of Applied Studies. (2009, November 26). *The NSDUH Report: Perceptions of risk from substance use among adolescents*. Rockville, MD: Substance Abuse and Mental Health Services Administration.

---

## SUGGESTED CITATION

---

Strashny, A. *Age of Substance Use Initiation among Treatment Admissions Aged 18 to 30*. The CBHSQ Report: July 17, 2014. Center for Behavioral Health Statistics and Quality, Substance Abuse and Mental Health Services Administration, Rockville, MD.



---

## SUMMARY

---

**Background:** Initiating substance use during childhood or adolescence is linked to substantial long-term health risks. Early (aged 12 to 14) to late (aged 15 to 17) adolescence is generally regarded as a critical risk period for the initiation of alcohol use, with multiple studies showing associations between age at first alcohol use and the occurrence of alcohol abuse or dependence. There is evidence across a range of other substances—including marijuana, cocaine, other psychostimulants, and inhalants—that the risk of developing dependence or abuse is greater for individuals who initiate use of these substances in adolescence or early adolescence than for those who initiate use during adulthood. **Methods:** Data from the 2011 Treatment Episode Data Set (TEDS) were analyzed, comparing demographic and other characteristics of admissions across five age-of-initiation groups: those initiating at the age of 11 or younger; between 12 and 14; between 15 and 17; between 18 and 24; and 25 or older. **Results:** In 2011, 74% of substance abuse treatment admissions aged 18 to 30 with known age of initiation information began substance use at the age of 17 or younger; 10.2% initiated use at the age of 11 or younger. 78.1% of admissions that began substance use at the age of 11 or younger reported abusing two or more substances at treatment entry; only 30.4% of admissions that initiated at the age of 25 or older reported multiple substances of abuse. Admissions that initiated substance use at the age of 25 or older reported the largest proportions of primary abuse of heroin (35.3%) and prescription pain relievers (33.2%). 38.6% of admissions that initiated substance use at the age of 11 or younger reported a co-occurring mental disorder. **Conclusion:** In 2011, 74.0% of treatment admissions aged 18 to 30 years reported that they initiated alcohol or drug use at the age of 17 or younger, which demonstrates the critical importance of prevention initiatives aimed at children and youths. The findings also show an inverse relationship between age of initiation and the number of substances of abuse reported: generally, a younger age of initiation was associated with more substances of abuse, particularly among those that initiated at the age of 11 or younger. Admissions that initiated substance use at the age of 11 or younger had the highest proportion of co-occurring mental disorders at the time of admission to substance abuse treatment, suggesting that initiation of substance use at this age may be an early indicator of mental disorders.

**Key words:** substance use initiation, age of initiation, Treatment Episode Data Set, TEDS

---

## AUTHOR INFORMATION

---

cbhsqrequest@samhsa.hhs.gov

---

## KEYWORDS

---

Short Report, Client-Level Data, Researchers

The Substance Abuse and Mental Health Services Administration (SAMHSA) is the agency within the U.S. Department of Health and Human Services that leads public health efforts to advance the behavioral health of the nation. SAMHSA's mission is to reduce the impact of substance abuse and mental illness on America's communities.

The Treatment Episode Set (TEDS) is an administrative data system providing descriptive information about the national flow of admissions aged 12 or older to providers of substance abuse treatment. TEDS intends to collect data on all treatment admissions to substance abuse treatment programs in the United States receiving public funds. Treatment programs receiving any public funds are requested to provide TEDS data on publicly and privately funded clients.

TEDS is one component of the Behavioral Health Services Information System (BHSIS), maintained by the Center for Behavioral Health Statistics and Quality (CBHSQ), SAMHSA. TEDS records represent admissions rather than individuals, as a person may be admitted to treatment more than once. Information on treatment admissions is routinely collected by State administrative systems and then submitted to SAMHSA in a standard format.

There are significant differences among State data collection systems. Sources of state variation include the amount of public funding available and the constraints placed on the use of funds, facilities reporting TEDS data, clients included, services offered, and completeness and timeliness of reporting. See the annual TEDS reports for details. TEDS received approximately 1.8 million treatment admission records from 46 states, the District of Columbia and Puerto Rico for 2011.

Definitions of demographic, substance use, and other measures mentioned in this report are available in Appendix B of the annual TEDS report on national admissions (see latest report at <http://www.samhsa.gov/data/2k13/TEDS2011/TEDS2011NAppB.htm>).

The *TEDS Report* is prepared by the Center for Behavioral Health Statistics and Quality, SAMHSA; Synectics for Management Decisions, Inc., Arlington, VA; and RTI International, Research Triangle Park, NC. Information and data for this issue are based on data reported to TEDS through October 15, 2012.

Latest TEDS Reports: <http://www.samhsa.gov/data/client-level-data-teds>

Latest TEDS public use files and variable definitions: <http://datafiles.samhsa.gov>

Other Substance abuse reports: <http://www.samhsa.gov/data>